Spacecraft Space Environment Effect and Anomaly Archive

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ISS image: 7 March 2012

Motivation for a Database

- This has been tried numerous time before but never seems to work, why try again?

- Database showing effects of space environment is good for both the CCMC modeling and user* community:
  - Communicates the importance of space weather on reliability of terrestrial, aeronautical, and space based technological infrastructure
  - Demonstrates societal relevance of space weather
  - Provides a clear record of who is a “user” of space weather products
  - Database of space weather events and impacts on technology is useful for evaluating ability to model relevant environments and their effects on technology
  - Provides a record of model and data support to user community including operations
  - Documents NASA program operational space weather needs

*Users: science, space environments and effects engineering, and operations communities

Chandra Solar Cycle 24 Radiation Interventions

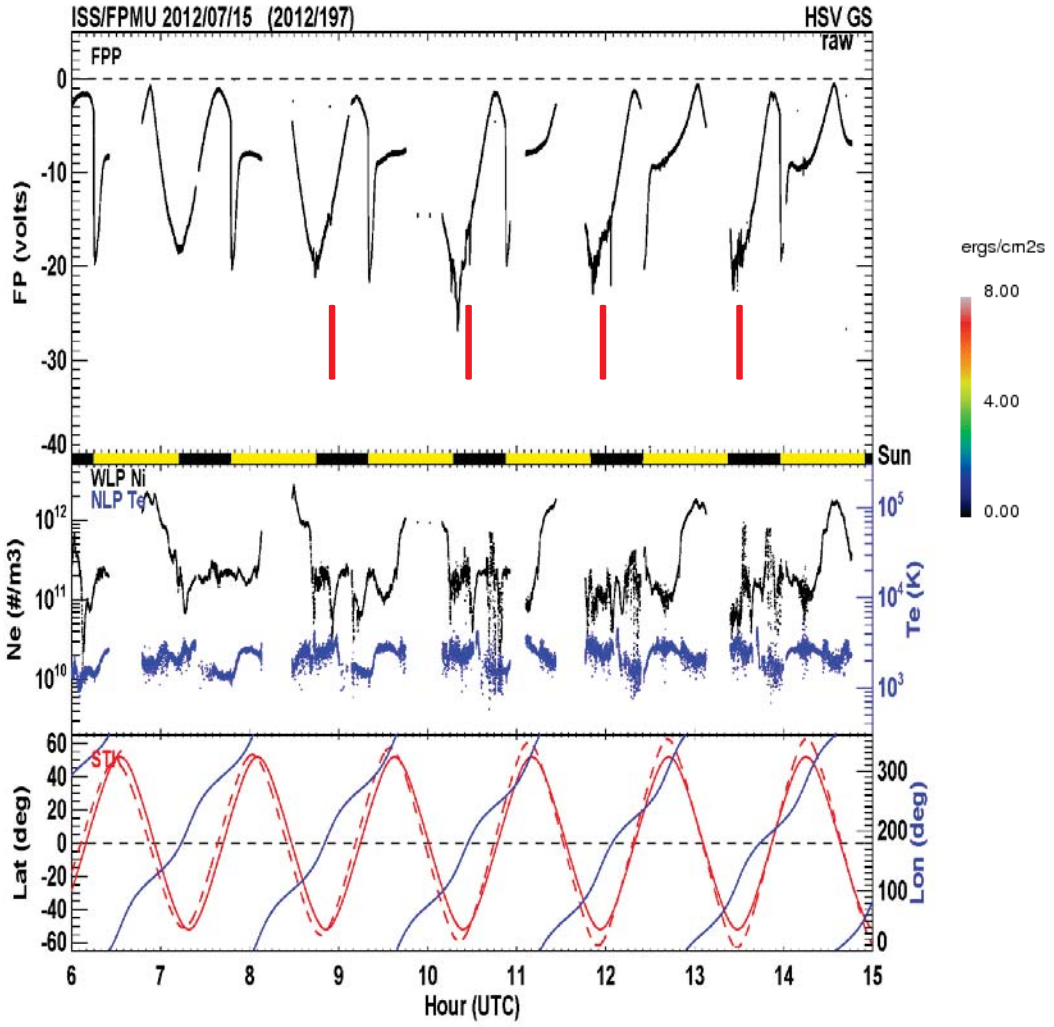
Event	Start	End	Lost Science time	Auto/Manual	Cause (HRC/EPHIN/ACE)
3 *(+1)*	**2011**		**406 ks (113 hr)**	**2/1**	**2/0/1**
1**	Jun 7 15:23 UT	Jun 8 12:50 UT	74.9 (20.8)	Auto	HRC (hard)
2	Aug 4 07:03	Aug 7 10:25	270.4 (75.1)	Auto	HRC (hard)
3	Oct 24 18:27	Oct 25 22:35	61.1 (17.0)	Manual	ACE P3' (soft)
4	*Oct 26 11:40*	*Oct 28 12:33*	*154 (42.8)*	Auto	*Command Telemetry Unit (SEU)*
10	**2012**		**1,246 ks (346 hr)**	**7/3**	**5/2/3**
5	Jan 23 06:00	Jan 26 08:27	192.1 (53.4)	Auto	HRC (hard)
6	Jan 27 19:39	Jan 30 02:20	163.4 (45.4)	Auto	HRC (hard)
7	Feb 27 03:24	Feb 27 20:23	61 (16.9)	Manual	ACE P3' (soft)
8	Mar 7 05:30	Mar 13 05:14	440 (122.2)	Auto	HRC (hard)
9	Mar 13 22:41	Mar 14 13:57	53.3 (14.8)	Auto	HRC (hard)
10	May 17 02:18	May 18 04:52	93.8 (26.1)	Auto	E1300 (hard)
11	Jul 12 19:59	Jul 14 00:09	61.7 (17.1)	Auto	E1300 (hard)
12	Jul 14 21:08	Jul 16 05:16	80.1 (22.3)	Manual	ACE P3' (soft)
13	Jul 19 11:44	Jul 20 04:09	56.5 (15.7)	Auto	HRC (hard)
14	Sep 3 12:57	Sep 4 12:41	44.5 (12.4)	Manual	ACE P3' (soft)
4	**2013**		**368.6 ks (102 hr)**	**1/3**	**0/0/3 (+1)**
15	Mar 17 12:32	Mar 19 05:58	105.7 (29.4)	Manual	ACE P3' (soft)
16	May 22 14:49	May 24 12:22	123.6 (34.3)	Auto	ACIS (hard)**
17	May 24 20:41	May 25 11:56	54.0 (15.0)	Manual	ACE P3' (soft)
18	Oct 02 02:04	Oct 03 13:27	85.3 (23.7)	Manual	ACE P3' (soft)
4	**2014 (through 28 March)**		**364.4 ks (101 hr)**	**1/1**	**0/1/1**
19	Jan 07 20:39	Jan 12 01:54	364.5 (101.3)	Auto/Manual	Multiple (hard), ACE P3' (soft)

* First radiation interruption since 2006 December 13 **First ACIS trigger event

Source: Chandra Radiation Central http://asc.harvard.edu/mta/RADIATION/

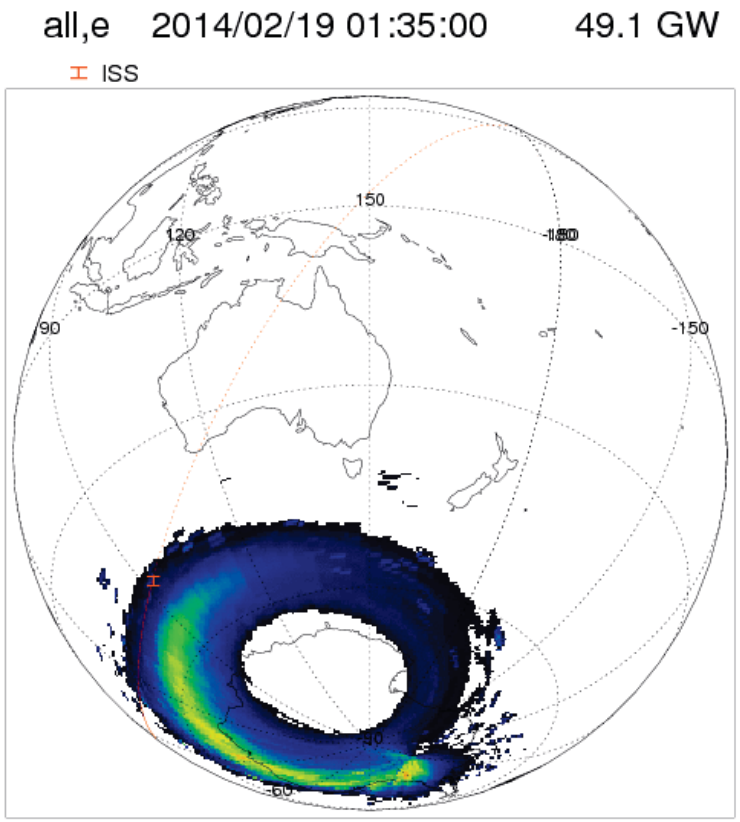
ISS Auroral Charging Investigation

ISS Floating Potential Measurement Unit



[Minow and Parker, 2013]

CCMC Ovation Prime



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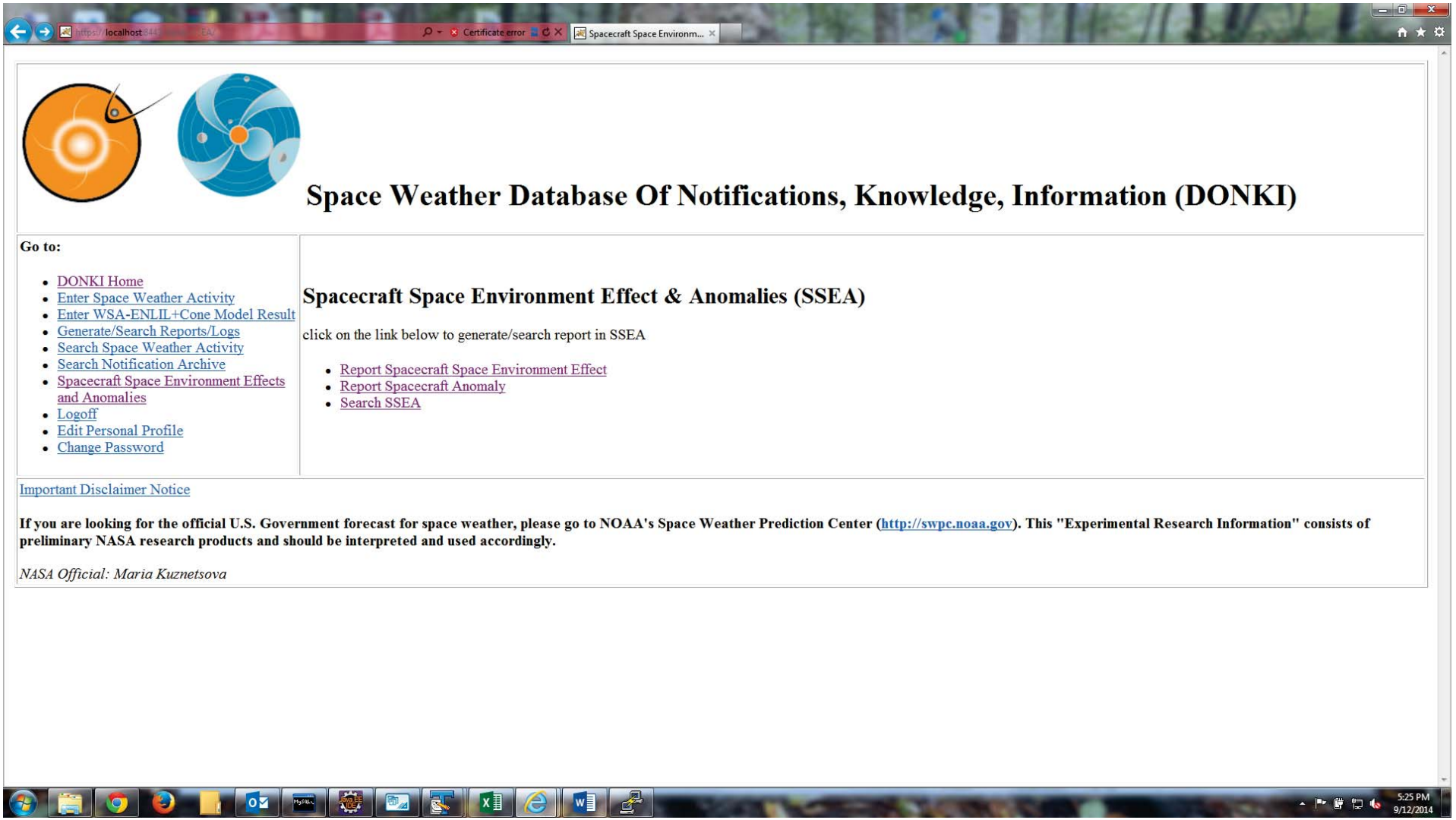
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Spacecraft Space Environment Effect & Anomalies (SSEA)
click on the link below to generate/search report in SSEA
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Report Spacecraft Anomaly
Search SSEA
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NASA Official: Maria Kuznetsova
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